



ABOUT THE SOUTH AUSTRALIAN SPACE SCHOOL



AIM

The aim of the South Australian Space School (SASS) is to provide a stimulating and rewarding educational experience for the most intelligent and talented of our Year 10 students in South Australia, to focus them on a career in science or engineering. This was the first state-based Space School to be established in Australia.

BACKGROUND

In 1992, through a government grant for the International Year of Space, the Australian International Space School (AISS) was founded in Sydney and Canberra, and attended by 100 students from around Australia and from other countries.

Mike Roach was the teacher chaperone to five AISS students from South Australia, and also to the two students who were selected to attend the International Space Camp in Huntsville, Alabama USA, later that year. Mike completed a Space Science Educators Course while in the USA. On his return, he continued his involvement with AISS as Educational Advisor, and he attended AISS each year in this capacity. Mike is a Director of the **Centre for Australian Space Education (CASE)**, a non-profit educational organisation of teachers, scientists and engineers interested in promoting the space industry in Australia. CASE coordinated many Australia-wide competitions and activities for students of all age levels and provided opportunities for study tours to the Kennedy Space Centre, and to the Mount Keck Telescopes in Hawaii.

John Hisco (Brighton High School [1995]) attended AISS in 1995, and he liaised with Mike on the development of teaching and learning programs in space science and astronomy for schools. He was on the committee, and an active member, of the Astronomical Society of South Australia. John developed learning programs with Pipehenge and has taught astronomy in schools since 1984.

In 1996 Mike was approached by Dr Olivia Samardzic, representing the Australian Institute of Physics SA, and they began discussions about the possibility of organising a Space School for South Australia. Mike and Olivia began work finding sponsors and organising the program.

RESIDENT ASTRONAUTS

The inaugural South Australian Space School took place in 1997, after successfully obtaining sponsorship from the DSTO (Defence Science and Technology Organisation, now DST) and British Aerospace (now BAE Systems). This sponsorship enabled us to send two boys and two girls to the Australian International Space School (AISS) held in Sydney and Canberra the following year, and to bring **NASA astronaut Dr Scott Parazynski** to Adelaide for the inaugural SASS. Dr Parazynski helped repair Mir in a space walk one month prior to visiting Adelaide and was personal physician to Major John Glenn on his Space Shuttle experience.

In 1998 Australian-born astronaut **Dr Andy Thomas** met and signed group photographs for the graduate SASS students and sponsors at a special Premier's State Reception at the Festival Theatre.

In 1999 astronaut **Dr James Reilly** visited the Space School and joined the students in activities and an excursion to the Planetarium at Mawson Lakes.

From 1998 to 2000, DSTO was the sole sponsor of the SASS, and during this time we found it difficult to fund students to attend AISS, and to guarantee an astronaut appearance. All supervisors, speakers and facilitators for this program are volunteers. **Andy Thomas** has given us great support when in Adelaide.

In 2001 the **Sir Ross & Sir Keith Smith Fund** became the major sponsor of the South Australian Space School, and since then the SASS has again been able to fund four SA students to attend AISS each year. In addition, we were able to sponsor two students from South Australia to attend the International Space Camp in Alabama, USA, in August 2002.

In 2003 SASS brought **Lt-Col Pamela Melroy** to Adelaide, a NASA Space Shuttle pilot, to help us celebrate the centenary of the Wright Brothers' first powered flight.

In 2004 SASS collaborated with the International Space University, which held its Space Studies Program in Australia for the first time and our students enjoyed meeting **ESA astronaut Dr Reinhold Ewald** where he related his adventures on the Mir Space Station.

In 2005 **Col. Pamela Melroy** returned once again to work with our SASS students and in 2006 we were entertained by NASA's **Dr Bobby Satcher**, a chemical engineer and orthopaedic surgeon.

In 2007 NASA Mission Specialist **Marsha Ivins**, who has travelled into space on five occasions and was head of the Exploration Branch of the NASA Astronaut Office, visited the SASS. In 2008 we again invited **Dr. Jim Reilly**, now a specialist space walker, who had recently returned from his third mission to assist in the completion of the International Space Station, and he returned again in 2009. **Hans Schlegel** an astronaut with the European Space Agency and NASA was resident astronaut to the NSC (VSSEC) in 2010 and to SASS in 2011. **John Fabian**, a retired space astronaut joined us in 2012 and **Paolo Nespoli** was resident astronaut for NSC (VSSEC) in 2013. Paolo is an Italian who has flown mission on behalf of the ESA and NASA. **Pam Melroy was Mission Commander** on the mission that both **Scott Parazynski** and **Paolo Nepoli** flew on board STS-120 as Mission Specialists, so it was great to see all Space School resident astronauts up there as a team!

Jean-Francois Clervoy joined SASS in 2014, our first ESA French astronaut! 2015 saw **Barry "Butch" Wilmore** come over from the USA to join SASS. 2016 saw **Luca Parmitano** join SASS, where he related the story of being the first person to nearly drown in space! **Dan Tani** joined us in 2019 and visited many of the venues with the SASS students. Our thanks to all of our astronauts for their time and continued friendship and support.

SASS staff believe that the students who attend the SASS have the capacity to become the science leaders of the future. Strong strategic partnerships with professional organisations and institutions that support the encouragement of our youth towards a career in science or engineering have been developed.

The space school has gained a very high profile within the South Australian science community, and our graduates are in demand as speakers at National Science Week events.

A gallery of all astronauts, links to their biographies, and many photographs of our graduates appear on our website: www.spaceschool.com





NATIONAL SPACE CAMPS



- **Australian International Space School (AISS) Woomera 2004-2006**
- **Australian International Space School (AISS) Canberra 2007**
- **National Space Camp Woomera (NSCW) 2008-2010**
- **National Space Camp VSSEC 2011- 2013**

In 2004 the SASS project team took on the responsibility of running AISS. From 2004 to 2006, the AISS was managed from Adelaide and held over the October long weekend, with a four day trip north to the famous Woomera rocket range. This has been made possible by the generous support of the Sir Ross & Sir Keith Smith Fund. AISS have students from all states and territories attending, along with representatives from New Zealand. In 2007, the AISS was held in Canberra during the July school holidays. In 2008 AISS was re-named National Space Camp Woomera, to reflect the camp more accurately. Students applied from all States and Territories. In 2011, with increasing security arrangements by Defence, the National Space Camp Woomera became more difficult to accommodate as a 5-day experience for our year 11 applicants. Staff decided to move our program from Woomera to the [Victorian Space Science Education Centre](#) (VSSEC) in Melbourne.

NATIONAL SPACE CAMP VSSEC

National Space Camp VSSEC September 2011



[Sir Ross & Sir Keith Smith Fund](#) enabled SASS to take 24 graduates of the SA Space School 2010 to the Victorian Space Science Education Centre.

Successful applicants took part in “**Mission to Mars**” and “**Mission to the Orbiting Space Laboratory**” after preparing for the missions in advance of their trip to VSSEC. They studied various aspects of human space flight and plan for scientific experiments that they would conduct during their visit to Mars. The successful applicants were posted a CD containing a full training package a month prior to the Space School. Based on their interests, they selected an appointment as mission astronauts (Chemist, Geologist, Physicist, Environmental Engineers, Space weather specialist) and chose positions in Mission Control. Mission Commanders were selected by the strength of their applications.

The Victorian Space Science Education Centre (VSSEC) is a world class specialist space-themed school education centre, established by the Victorian State Government to encourage excitement about the learning of science. Students are able to role play real space practices including mission briefings, flight control and simulated space exploration in hostile and dangerous environments. www.vssec.vic.edu.au

This program has been repeated each year since then. Twenty four 24 graduates from the South Australian Space School of the previous year were selected, through written application, to attend lectures in Adelaide and then fly to VSSEC for a two day program. They were chaperoned by our volunteer staff and the entire sponsorship for this unique experience comes from the Sir Ross & Sir Keith Smith Fund.

SPACE SCHOOL STAFF

The coordinators of the SASS meet throughout the year to look at feedback that is collected from graduates. This assists in designing new programs and schedules. Staff review budgets and timelines to ensure smooth running of the space schools and discuss new opportunities for our graduates and current students.

Mike Roach Physics teacher (Retired), Hamilton Secondary College; past president, South Australian Science Teachers Association (SASTA); treasurer, Australian Science Teachers Association (ASTA); Winston Churchill Fellow 2001; Prime Minister's Prize for Excellence in Secondary Science Teaching, 2005, Life Member of SASTA 2011. The Space Centre at Hamilton Secondary College was named after Mike.

Dr Olivia Samardzic PhD, experimental atomic physics; previous Chair, Australian Institute of Physics (AIP) Education Committee, Women in Physics, and Senior Research Scientist at the Defence Science and Technology (DST) – a SASS sponsor since 1997, 2021 Minister Counsellor Defence Science and Technology (London & Paris).

John Hisco Astronomical Society of South Australia (past President) (1976 – 2022); SASS web page designer; physics teacher seconded to Health and Safety for Dept for Education (Ret).

Dr Kimberley Clayfield PhD, Mechanical Engineering; Chair, Sydney Section, American Institute of Aeronautics and Astronautics. Kimberley currently works for the CSIRO as Executive Manager in Space Science & Technology.

Susan Cockshell Physics teacher, Annesley College, Loretto College, Kings Baptist Grammar School, Avenues College. Susan has been with us since 1997 and is currently a teacher at Charles Campbell College (2021-).

Malcolm Schapel Information Technology, Hamilton Secondary College. Malcolm prepares all experiments and model rocket building materials for the space schools. He instructs the students in the building of their rockets to optimise successful launches (Retired).

Andrea Boyd studied mechatronics engineering at Adelaide University. She attended SASS in its second year in 1998 as a year 10 student. She is the Deputy Lead of Astronaut Operations at the European Space Agency (2021). She is the first Australian to be appointed to a senior management role in the agency. Her job involves live commanding and future planning for Europe's external sun experiments aboard the International Space Station (ISS). Andrea is the only Australian in the world working in the International Space Station Flight Control Team. Andrea is a moonshot believer. She grew up in country South Australia, watching Star Trek.

Karen Palumbo previous Coordinator Advanced Technology Project at Hamilton Secondary College, previous Vice President of the SA Science Teachers Association, Early Career STEM Educator of the Year Award- School Teaching at DFEST. Karen is currently teaching at Henley High School.

Belinda Hawker was Senior Chemistry teacher at Hamilton Secondary College and joined the SASS staff in 2012. Belinda previously taught for 16 years in NSW (now retired).

Andrew Moschu, Mission to Mars program and science teacher at Hamilton Secondary College joined the Space School team in 2021.

Lily Taylor is a laser physicist working for Defence Science and Technology Group since 2018. She has an honours degree in physics from the University of Adelaide where she developed a single frequency Holmium laser for her honours project. During her time at the university Lily also worked on a high precision optical clock and characterising new design Bragg gratings in optical fibre.

Lily is highly passionate about STEM outreach and sharing her passions for STEM. She is particularly interested in engaging rural and disadvantaged students and providing opportunities that would not usually be available to those students.

Lily has had a long standing passion for space, growing up in regional SA where she could clearly see the stars from her backyard. She is a past graduate of the SA Space School.

Vienna Tran is a space medicine researcher in the early stages of her career. Her research helps to verify the use of artificial gravity for the hip muscles of astronauts and terrestrial patients during a prolonged bed rest analogue. She holds a First-Class Honours degree from The University of Adelaide for her thesis space medicine. During her clinical training, Vienna has undertaken postings with the aeromedical retrieval team at the Royal Flying Doctors Service (RFDS), as well as with the Institute of Aviation Medicine at the Royal Australian Air Force (RAAF). In 2020, Vienna graduated from the International Space University's Southern Hemisphere Space Studies Program (ISU SHSSP) with a scholarship from the South Australian Space Industry Centre (SASIC). She went on to share her experiences from the program, and about education more broadly, as a panellist on stage at the 9th Australian Space Forum. Since then, she has continued to give talks and write articles on space health, industry for STEM to the local and global community. In particular, she enjoys engaging with visitors in her role at the Australian Space Discovery Centre. In 2022, Vienna will be working in regional South Australia as a medical doctor to further her skills in healthcare for Earth and space. Vienna is a past graduate of SA Space School.